

REMARKS

The specification has been amended to add section headings and to make an editorial change therein to place the application in condition for allowance at the time of the next Official Action.

The previously pending claims have been replaced with new claims that are believed to be proper as to form.

Support for the new claims is found in Figures 3-5.

Claim 47 defines a protective element that includes a substantially square base (e.g., with reference to Figures 3-5, the square defined by the bottoms of recesses 7) with opposite planar sides, two primary projections (e.g., elements 2 in Figures 3-5) that each extend from a different respective one of the opposite planar sides, and four auxiliary projections (e.g., elements 4 in Figures 3-5) that each extend from a different respective corner of the base and that are spaced apart from each other by substantially equally sized recesses (7), each of the four auxiliary projections extending in a direction of a diagonal of the base crossing the respective corner and having opposite faces that are each substantially parallel to a respective one of the planar sides of the substantially square base (as shown in Figure 5), where the protective element is heavier than water and constructed and arranged to rest on a feature to be protected from breaking waves.

Claim 47 is distinguishable from the references previously submitted in Information Disclosure Statements. For example, BISHOP et al. 5,879,105 does not disclose a protective element that is heavier than water and constructed and arranged to rest on a feature to be protected from breaking waves. The elements therein are hollow and buoyant and designed to float offshore to disperse wave energy. There is no suggestion in the reference to make the elements heavier than water (note that the reference to marine concrete at column 9, line 9 does not negate the buoyancy of the element - recall that concrete boats of World War II floated) and thus there is no motivation to make the shape described therein heavier than water to rest on a feature to be protected from breaking waves.

CHEVALLIER 4,347,017 does not disclose a substantially square base (the base therein is actually rectangular, the dashed outline of a square in Figure 1 notwithstanding), or four auxiliary projections that each extend from a different respective corner of the base and that are spaced apart from each other by substantially equally sized recesses (the recesses are not equally sized). Further, each of the four auxiliary projections extends horizontally (the top 20 and bottom 21 are parallel to each other), not in a direction of a diagonal of the base crossing the respective corner.

Further, as is clear from Figure 1 of CHEVALLIER, the element therein is not substantially symmetrical on its four

sides. When such an element is placed (with great effort as the elements are quite heavy) on a breakwater, it must be positioned in a particular orientation. If it is not placed in the correct orientation, it must be re-placed (again, with great effort). The symmetry afforded by the substantially equally sized recesses in the invention of claim 47 permits placement without the particular orientation required of the CHEVALLIER element. Accordingly, the present invention offers significant improvements in the construction of plural protective elements that rest on a feature to be protected from breaking waves.

TAISUKE KANEKO et al. 3,614,866 disclose an element similar to that in CHEVALLIER without the recesses.

GB 970,199 discloses the use of bituminous materials, but no particular shape.

NL 1,016,098 discloses an asphalt element for a road, without the projections claimed herein.

TSUZUKI 3,582,034 discloses a breakwater concrete block with six projections, but none of the projections extends in a direction of a diagonal of the base.

DE 198 15 205 and the Project C-Fix reference disclose materials, but not shapes for wave-retarding elements.

TOKUNAGA 3,759,043 (Figure 22) and EP 0 803 612 disclose an energy dissipating concrete block with a shape similar to that in CHEVALLIER.

Independent claim 62 is allowable for reasons given above, and because the references do not disclose that the two primary projections that each extend from a different respective one of the opposite planar sides are each a substantially rectangular parallelepiped, or that recesses are substantially equally sized trapezoidal recesses, or that each of the four auxiliary projections extending in a direction of a diagonal of the base have a pointed shape defined by two flat surfaces that are each coplanar with a respective adjacent one of the two flat surfaces of an adjacent one of the auxiliary projections. As to this latter point, the flat surfaces are shown in Figures 3-5 as element 6. These flat surfaces are convenient for storing the elements prior to use so as to permit stacking in a compact manner.

Claim 64 defines the same invention using different claim terminology and by looking at the protective element in a different way. That is, the invention is described as two parallelepipeds; the first being the combination of the two projections 2 and the second being defined by the four auxiliary projections 4. The first parallelepiped extends symmetrically through a center of the second parallelepiped and is oriented so that longitudinal faces of the first parallelepiped are at 45° to longitudinal faces of the second parallelepiped, where each of the longitudinal faces of the second parallelepiped have two coplanar flat areas separated by a trapezoidal recess, such as

shown in Figures 3-5. None of the references discloses two parallelepipeds arranged in this manner.

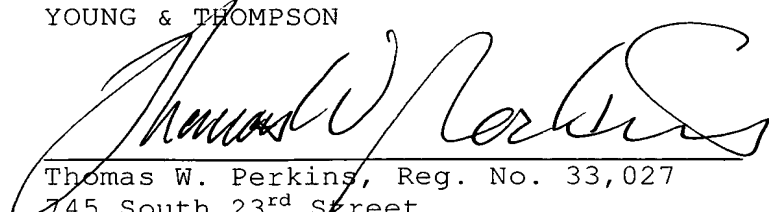
Applicants have committed considerable resources to the testing and development of the protective element claimed herein. Submitted herewith are three papers presented at various conferences that describe the testing and development of the Xbloc ® protective element. As is apparent from the pictures and descriptions therein, the tested element, which is identical to the one being claimed, offers significant advantages over other protective elements.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Consideration and allowance of the new claims are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON

A large, stylized handwritten signature in black ink, appearing to read 'Thomas W. Perkins', is written over the printed name and address.

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Appendix:

The Appendix includes the following items:

- copies of three papers presented at various conferences that describe the testing and development of the Xbloc ® protective element